ecology and environment, inc.

101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537

International Specialists in the Environment

MEMORANDUM

DATE: April 24, 1987

TO: John Osborn, FIT-RPO, USEPA, Region X

THRU: for David Buecker, FIT-OM, E&E, Seattle DAT

FROM: Lazar Gorelik, E&E, Seattle L.G.

SUBJ: Preliminary Assessment (Revised)
American Tar Company Site
Spokane, Washington

REF: TDD F10-8612-08

CC: Deborah Flood, HWD-SM, EPA, Region X
Thomas A. Tobin, E&E, Seattle

1. Purpose of Preliminary Assessment:

Pursuant to U. S. Environmental Protection Agency (EPA) Contract No. 68-01-7347 and Technical Directive Document (TDD) No. F10-8612-08, Ecology and Environment, Inc. (E&E) conducted a Preliminary Assessment (PA) of the American Tar Company Site in Spokane, Washington. The PA represents the second step of a three-step investigative process which begins with site discovery and concludes, if necessary, with a site inspection. The investigative process, in general, is intended to identify, compare, and rank the potential hazards associated with a particular site relative to other sites across the nation for the purpose of identifying priority sites requiring remedial responses. It does not include extensive or complete site characterization, contaminant fate determination, or quantitative risk assessment.

The American Tar Company Site PA is based on data derived from available files and literature pertaining to the site (1,2,3,4) and on an assessment of site conditions, as observed by E&E in January 1987 during a site visit to the adjacent Spokane Gas Manufacturing Site, Spokane, Washington (TDD F10-8612- 08). Information developed during the PA is summarized in Appendix A on EPA Form 2070-12.

2. Person(s) conducting the site visit:

Lazar Gorelik, E&E, Seattle, (206) 624-9537
William Carberry, E&E, Seattle, (206) 624-9537

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3. Date of the site visit:

January 5 through 6, 1987.

4. Person(s) contacted for the site visit:

Mr. David Distler, American Tar Company, Seattle, WA (206) 632-0828.
Mr. Richard Brown, owner of the Spokane Gas Manufacturing Site, Spokane, WA (509) 535-0112.
Mr. Raymond Allen, Washington Water Power Company, Spokane, WA (509) 489-0500, ext. 2406.
Mr. Bill Gustafson, former employee of the Spokane Gas Manufacturing Plant. Contacted through Mr. R. Allen, WWP.
Mr. Roy Batts, Spokane Water Department, Spokane, WA (509) 456-4384.
Mr. Walter D. Farrel, Burlington Northern, Inc., Spokane, WA (509) 455-7313.

5. Information obtained during the site visit and file review:

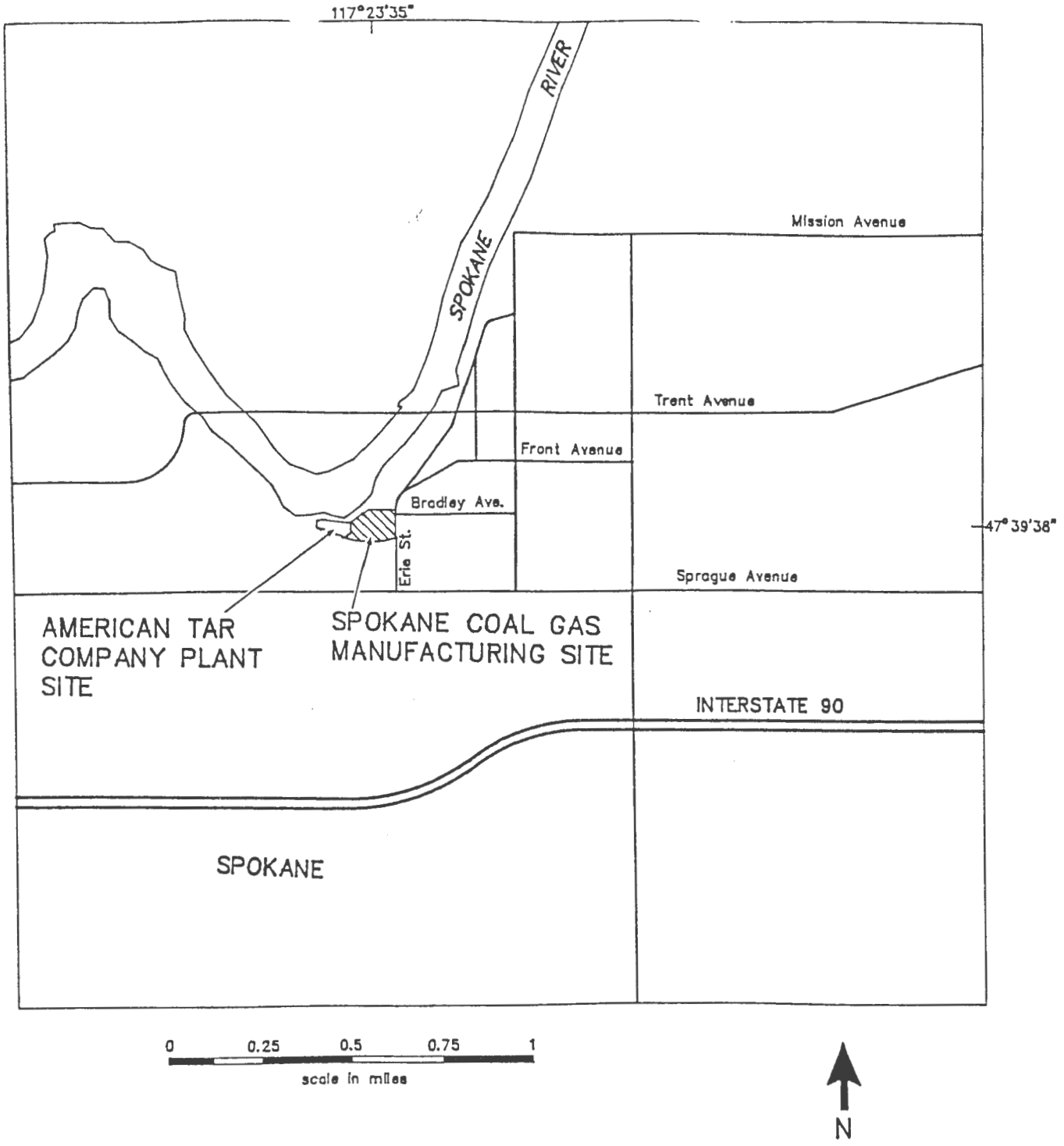
5.1 Site Location and Description

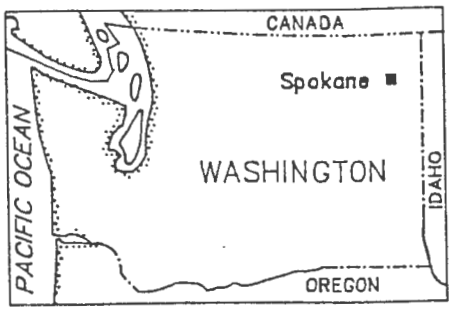
The American Tar Company Site lies adjacent to the Spokane Gas Manufacturing Site, Spokane, Washington, in Section 17, Township 25 North, Range 43 East, on property formerly known as Tract B of Dennis and Bradley's Addition to Spokane [1]. The current site address is North 111 Erie Street, Spokane, Washington (Figure 1). Information provided by American Tar Company through the law firm of Roberts and Shefelman, (Appendix B) failed to establish the ownership history of the American Tar Company Site and was inadequate to assess the processes of the former plant.

According to Mr. Gustafson, a former employee of the adjacent Spokane Gas Manufacturing Plant, all tar produced by Spokane Gas was sold to American Tar Company, which processed the tar at the American Tar Company Site between approximately 1905 and the mid-1940s. Mr. Gustafson provided a simplified layout of the former gas plant (Figure 2), indicating that the coal tar from the tar-separator was pumped directly to the American Tar Company Plant. The American Tar Company Site is now covered by gravel and is used by Mr. R. Brown as a surplus storage yard for building materials.

5.2 Physical Environment

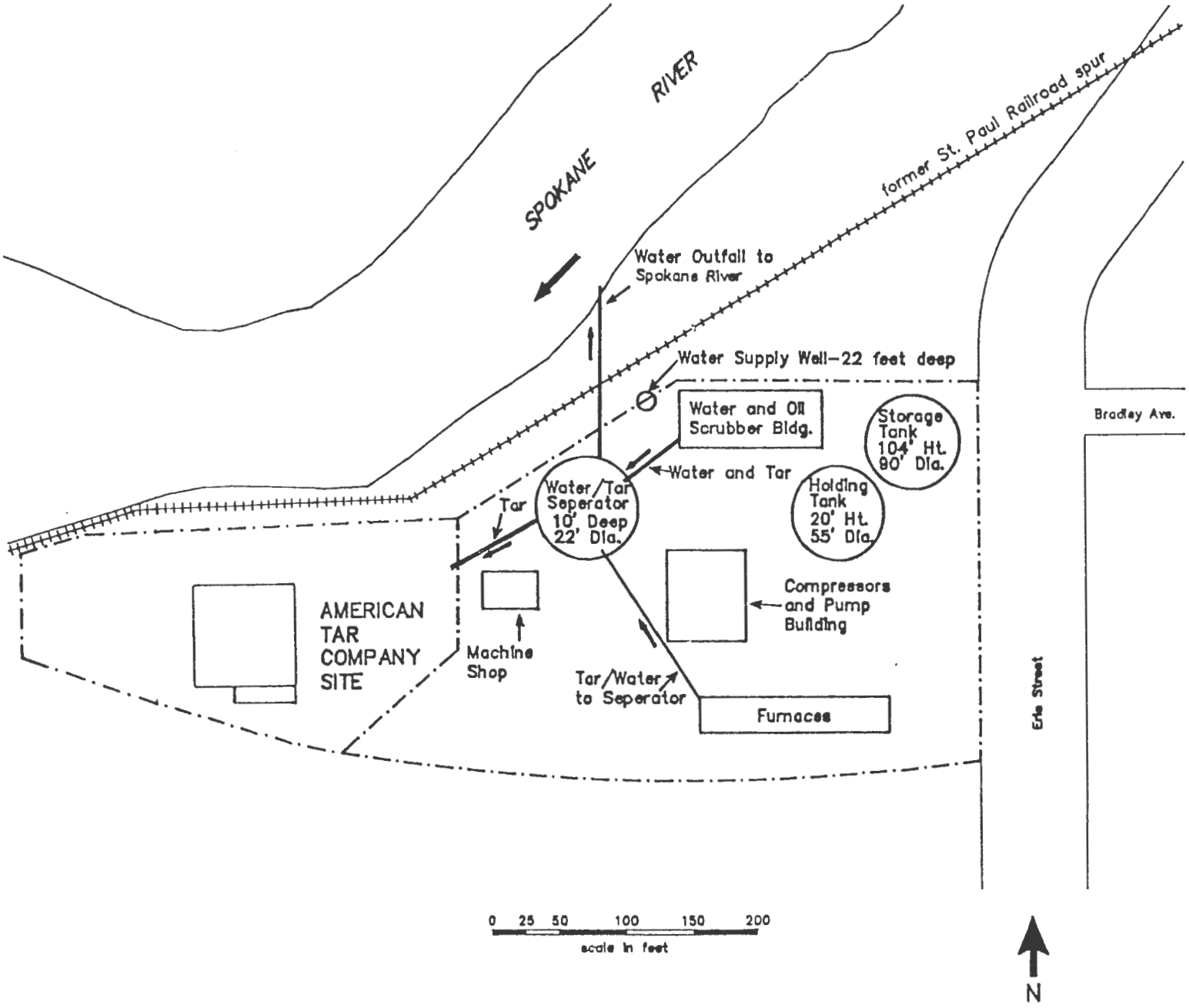
The American Tar Company Site covers an estimated two acres and lies in a residential and commercial area between the Spokane River and the Northern Pacific Railway (Appendix B, Figure 4). A bridge constructed in 1982 divides the American





ecology & environment, inc.	
Job: F10-8612-08	Waste Site: WA0502PAA
Drawn by: D. Pippenger	Date: 1/26/1988

FIGURE 1
LOCATION MAP
AMERICAN TAR COMPANY PLANT SITE
Spokane, WA



LEGEND

—·—property line

← Flow direction

ecology & environment, Inc.	
Job: F10–8612–08	Waste Site: WA0502PAA
Drawn by: D. Pippenger	Date: 1/26/1987

FIGURE 2
LAYOUT OF SPOKANE COAL GAS MANUFACTURING PLANT (CIRCA 1905–1948)
AMERICAN TAR COMPANY PLANT SITE
Spokane, WA

Tar Company Site and the Spokane Gas Manufacturing Site (Appendix B, Figure 4). The Spokane River reportedly flows "over a very tight bed which permits practically no seepage into the ground" [2].

Drinking water in Spokane is obtained from wells owned by Spokane Water Works [2]. Spokane Water Works produces about 281 million gallons per day from approximately 29 wells. The site is located over the Spokane Valley-Rathdrum Prairie Aquifer, the sole source aquifer for the City of Spokane. The estimated yield of the aquifer is approximately one-half billion gallons per day, which is sufficient for consumption by 1.5 million people and associated industries [2].

5.3 Waste Types, Quantities, and Characteristics

The types and quantities of wastes and by-products generated at the American Tar Company Site are unknown since no data are available on the technological process of the former plant. It has been reported that coal tar was normally processed into many useful by-products in the past including: bulk commodities such as pitches, creosote oil and other distillates; road tar and other refined tars; and chemicals such as crude tar acids or bases and naphtalene [3].

The average production rate of coal tar by the former Spokane Gas Plant was reported to be 237,000 gallons per year [4]. This value probably closely reflects the rate of the coal tar use at the American Tar Site.

Coal tars are primarily composed of polynuclear aromatic hydrocarbons (PAH), including heterocyclic compounds [3]. Coal tars contain large amounts of high molecular weight residual material with 40% to 75% of the tars boiling above 300°C and 25% to 65% above 355°C [3]. Coke-oven coal tars are dense (specific gravity at 15°C is 1.196) and highly viscous (1100 centistokes at 40°C) materials [3].

5.4 Pollutant Mobilization, Migration Pathways, and Risks

Contamination of surface soil by a black, solidified residue was observed at the American Tar Company Site during the site visit at one location (Figure 4, Appendix B) identified by Mr. R. Brown. A layer of gravel was placed on the surface in the area (approximately 20 x 30 feet) to stabilize the soil for vehicle operations in the summer, indicating the residue softens appreciably in response to warmer weather.

The type, quantity, and physical chemical properties of the residue remaining at the site are unknown. Based on the

observed physical state of the residue (i.e. solidifed) and its presence on the site surface after four decades, it may be assumed that the residue is stable and essentially immobile in the environment. Accumulation of heat by the residue in the summer probably results in softening of the material. The physical state, appearance, probable origin, and softening point of the residue suggest that it is probably a "light fraction" of coal tar distillation [3]. This assumption leads to a conclusion that the coal tar from the Spokane Gas Manufacturing Plant was probably refined at American Tar Plant into a variety of products consisting of distillates and residual products. A typical distribution of coal tar by distillation can be given as: about 5% of tar chemicals (naphtalene, tar acids); about 30% of distillation oils (creosote, other distillates); and 60% to 65% of residuals (road tars, crude and refined tars, pitches, and pitch coke) [3]. From these products, tar oils containing polynuclear aromatic hydrocarbons and other chemicals are of primary environmental concern [3]. However, it is unknown whether these materials remain at the site as waste products. If large quantities of tar oils were released at the site in the past, it is likely that migration toward the river and contamination of sediment near the site has occurred. Although PAH's are stable in the environment and have a high affinity to soil and sediment, it is difficult to assess after four decades whether coal tar oils, if released, would still be present at the site.

6. Preliminary HRS Score

No preliminary HRS Score has been computed for reasons explained in Section 7.

7. Follow-up Recommendations

Based on information collected during the site visit, data provided by Mr. Gustafson, Mr. R. Brown, and the Spokane Water Department, and other data available in the literature, it appears that coal tar from the former Spokane gas plant was probably refined at the American Tar Company Site into a variety of products. The presence of a coal tar residue at the site suggests that other distillation products of coal tar were probably released at the site in the past. Based on data gathered during the preliminary assessment, it appears that the former American Tar Company Site has a potential to cause human health problems or environmental damage. Additional information on the former plant will be required to determine the types of materials, by-products, and wastes generated in the past at the site, and to assess the severity of any potential risks.

List of References

1. Ecology and Environment, Inc., 1986. Coal/Oil Gasification Site Study, Region X. Prepared for the USEPA under Contract No. 68-01-6682 and TDD R10-8405-03.
2. Glen A. Yake, Department of Public Utilities, Water Division, City of Spokane. Spokane Water - The Best in the West.
3. Environmental Research & Technology, Inc., Pittsburgh, PA and Coppers Company, Inc., 1984. Handbook on Manufactured Gas Plant Sites. Prepared for Utility Solid Waste Activity Group Superfund Committee, Washington, DC under ERT Project No. P-D215.
4. Air and Energy Engineering Research Laboratory, Research Triangle Park, NC 27711, 1985. Survey of Town Gas and By-Product Production and Locations in the U.S. (1880-1950). Prepared for USEPA under Contract No. 68-02-3137, EPA-600/7-85-004.

APPENDIX A

PRELIMINARY ASSESSMENT EPA FORM 2070-12

ecology and environment, inc.
108 SOUTH WASHINGTON, SUITE 302, SEATTLE, WASHINGTON 98104, TEL. 206-624-9537
International Specialists in the Environment

Purpose: Preliminary Assessment
EPA Form 2070-12

Site: American Tar Company Site
Spokane, Washington

Date of Inspection: January 5 - 6, 1987

TDD Number: F10-8612-08

FIT Investigators: Lazar Gorelik
William Carberry

Report Prepared By: Lazar Gorelik

Report Date: March 1987

Submitted to: John Osborn, RPO
Field Operations and Technical Support Branch
U.S. Environmental Protection Agency
Region X
Seattle, WA

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POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 State	02 Site Number
WA	

II. SITE NAME AND LOCATION

01 Site Name (Legal, common, or descriptive name of site)	02 Street, Route No., or Specific Location Identifier				
American Tar Company	North 111 Erie Street				
03 City	**04 State**	**05 Zip Code**	**06 County**	**07 County Code**	**08 Cong Dist**
Spokane	WA	99202	Spokane	063	--

09 Coordinates

Latitude	Longitude
47° 39' 38.0"	117° 23' 35.0"

10 Directions to Site (Starting from nearest public road)

III. RESPONSIBLE PARTIES

01 Owner (if known)	02 Street (Business, mailing, residential)		
Burlington Northern, Inc.	Suite 210, Hutton Building, 9 South Washington Street		
03 City	**04 State**	**05 Zip Code**	**06 Telephone Number**
Spokane	WA	99204	(509) 455-7321
07 Operator (if known and different from owner)	**08 Street (Business, mailing, residential)**		
Mr. Richard Brown	North 111 Erie Street		
09 City	**10 State**	**11 Zip Code**	**12 Telephone Number**
Spokane	WA	99202	(509) 535-0112

13 Type of Ownership (Check one)

[X] A. Private [ ] B. Federal _____ (agency name) [ ] C. State [ ] C. County [ ] E. Municipal

[ ] F. Other _____ (specify) [ ] G. Unknown

14 Owner/Operator Notification on File (Check all that apply)

[ ] A. RCRA 3001 Date Received: ___/___/___ (Month Day Year) [ ] B. Uncontrolled Waste Site (CERCLA 103c) Date Received: ___/___/___ (Month Day Year) [X] C. None

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 On-Site Inspection

[X] Yes Date 01 / 05/ 87 (Month Day Year) [ ] No

[ ] A. EPA [X] B. EPA Contractor [ ] C. State [ ] D. Other Contractor

[ ] E. Local Health Official [ ] F. Other _____ (specify)

Contractor Names(s): Ecology & Environment, Inc. (E&E)

02 Site Status (Check one)

[ ] A. Active [X] B. Inactive [ ] C. Unknown

03 Years of Operation

1905	1948	[ ] Unknown
Beginning Year	Ending Year	

04 Description of Substances Possibly Present, Known, or Alleged

Wastes and by-products possibly present at the site are: coal tar residues.

05 Description of Potential Hazard to Environment and/or Population

Potential for the leaching of polynuclear aromatic hydrocarbons into the Spokane River.

V. PRIORITY ASSESSMENT

01 Priority for Inspection (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)

[ ] A. High (Inspection required promptly) [X] B. Medium (Inspection required) [ ] C. Low (Inspect on time available basis) [ ] D. None (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 Contact	02 Of (Agency/Organization)		03 Telephone No.	
Deborah Flood	EPA, Region X, Seattle		(206) 442-2722	
04 Person Responsible for Assessment	**05 Agency**	**06 Organization**	**07 Telephone No.**	**08 Date**
Lazar Gorelik	EPA-FIT	E&E, Inc.	(206)624-9537	01 / 05/ 87 (Month Day Year)

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 State: WA	02 Site Number:

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 Physical States (Check all that apply)

- [X] A. Solid
- [ ] B. Powder, Fines
- [ ] C. Sludge
- [ ] D. Other _____ (Specify)
- [ ] E. Slurry
- [X] F. Liquid
- [ ] G. Gas

02 Waste Quantity at Site (Measure of waste quantities must be independent)

Tons: UNK

Cubic Yards: UNK

No. of Drums: UNK

03 Waste Characteristics (Check all that apply)

- [X] A. Toxic
- [ ] B. Corrosive
- [ ] C. Radioactive
- [X] D. Persistent
- [ ] E. Soluble
- [ ] F. Infectious
- [ ] G. Flammable
- [ ] H. Ignitable
- [ ] I. Highly Volatile
- [ ] J. Explosive
- [ ] K. Reactive
- [ ] L. Incompatible
- [ ] M. Not Applicabl

III. WASTE TYPE

Category	Substance Name	01 Gross Amount	02 Unit of Measure	03 Comments
SLU	Sludge			
OLW	Oily Waste	UNK		Waste quantities are unknown since
SOL	Solvents			waste generation ceased over 30
PSD	Pesticides			years ago.
OCC	Other Organic Chemicals			
IOC	Inorganic Chemicals			
ACD	Acids			
BAS	Bases			
MES	Heavy Metals	UNK		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 Category	02 Substance Name	03 CAS Number	04 Storage/Disposal Method	05 Concentration	06 Measure of Concentration
OLW	Phenanthrene	85-01-8	TK	UNK	
OLW	Fluoranthene	206-44-0	TK	UNK	
OLW	Benzo (a) antracene	---	TK	UNK	
OLW	Benzo (k) fluoranthene	207-08-9	TK	UNK	
OLW	Benzo (a) pyrene	50-32-8	TK	UNK	
OLW	Benzo (g,h,i) perlene	191-24-2	TK	UNK	

- Compounds listed were found to be present in high concentration from previous analyses on coal tar. Contaminants present may vary with the type of raw materials, operation conditions, and site conditions. conditions, and site conditions.

V. FEEDSTOCKS (See Appendix for CAS Numbers)

Category	01 Feedstock Name	02 CAS Number	Category	01 Feedstock Name	02 CAS Number
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Coal/Oil Gasification Site Study, Region X, E&E, 1986, TDD R10-8405-03.
E&E Site Visit, 01/08/87.
Handbook on Manufactured Gas Plant Sites, Edison Electric Institute, 1984.

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFIT
01 State: WA | 02

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. Groundwater Contamination
02 [ ] Observed (Date: _____) [X] Potential [ ] Alleged
03 Population Potentially Affected: _____
04 Narrative Description

Low potential for ground water contamination. The site is located over the Spokane Valley - Rathdrum Prairie Aquifer, the sole source aquifer for the City of Spokane. The Spokane River flows over a tight bed of a natural formation.

01 [X] B. Surface Water Contamination
02 [ ] Observed (Date: _____) [X] Potential [ ] Alleged
03 Population Potentially Affected: _____
04 Narrative Description

Potential migration of organic and inorganic compounds from the site into the Spokane River.

01 [ ] C. Contamination of Air
02 [ ] Observed (Date: _____) [ ] Potential [ ] Alleged
03 Population Potentially Affected: _____
04 Narrative Description

None known, reported, or observed

01 [ ] D. Fire/Explosive Conditions
02 [ ] Observed (Date: _____) [ ] Potential [ ] Alleged
03 Population Potentially Affected: _____
04 Narrative Description

None known, reported, or observed

01 [ ] E. Direct Contact
02 [ ] Observed (Date: _____) [ ] Potential [ ] Alleged
03 Population Potentially Affected: _____
04 Narrative Description

None known, reported, or observed

01 [X] F. Contamination of Soil
02 [ ] Observed (Date: _____) [X] Potential [ ] Alleged
03 Area Potentially Affected (Acres) approx. 2
04 Narrative Description

Potential soil contamination by organic chemicals as a result of past operational practices.

01 [ ] G. Drinking Water Contamination
02 [ ] Observed (Date: _____) [X] Potential [ ] Alleged
03 Population Potentially Affected: _____
04 Narrative Description

Remote potential for ground water contamination.

01 [ ] H. Worker Exposure/Injury
02 [ ] Observed (Date: _____) [ ] Potential [ ] Alleged
03 Workers Potentially Affected: _____
04 Narrative Description

None known, reported, or observed

01 [ ] I. Population Exposure/Injury
02 [ ] Observed (Date: _____) [ ] Potential [ ] Alleged
03 Population Potentially Affected: _____
04 Narrative Description

None known, reported, or observed

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 State	02 Site Number
WA	

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. Damage to Flora — 02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
04 Narrative Description

None known, reported, or observed

01 ☐ K. Damage to Fauna — 02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
04 Narrative Description (include name(s) of species)

None known, reported, or observed

01 ☐ L. Contamination of Food Chain — 02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
04 Narrative Description

None known, reported, or observed

01 ☐ M. Unstable Containment of Wastes (Spills/runoff/standing liquids, leaking drums) — 02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
03 Population Potentially Affected: _____ 04 Narrative Description

None known, reported, or observed

01 ☐ N. Damage to Off-site Property — 02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
04 Narrative Description

None known, reported, or observed

01 ☐ O. Contamination of Sewers, Storm Drains, WWTPs — 02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
04 Narrative Description

None known, reported, or observed

01 ☐ P. Illegal/Unauthorized Dumping — 02 ☐ Observed (Date: _____) ☐ Potential ☐ Alleged
04 Narrative Description

None known, reported, or observed

05 Description of Any Other Known, Potential, or Alleged Hazards

Contamination of soil by a coal tar residue was observed at the site.

III. TOTAL POPULATION POTENTIALLY AFFECTED:

IV. COMMENTS

Additional information on the American Tar Company Site will be required to determine the types of materials, by-products, and wastes that were generated in the past at the site.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E&E Site Visit, 01/05/87.
Yake, G.A., Spokane Water The Best in the West, Department of Public Utilities, Water Division, City of Spokane